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PYCNOGONIDA OF SAGAMI BAY—SUPPLEMENT¹⁾

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With 6 Text-figures

Since I had reported eighteen species of the Pycnogonida from Sagami Bay in a previous paper (UTINOMI, 1959), some new materials have been added to the collections of the Biological Laboratory of the Imperial Household for recent four years.

On subsequent examination, it was revealed that the new materials comprize 16 species belonging to 9 genera in all, and include a new species of *Ascorhynchus*, a genus predominantly known from Japanese deep waters.

The following species are recorded in this paper :

Family Nymphonidae

Nymphon japonicum ORTMANN

Nymphon ortmanni HELFER

***Nymphon kodanii* HEDGPETH

**Nymphon giraffa* LOMAN

Family Callipallenidae

***Callipallene phantoma* (DOHRN)

Propallene longiceps (BÖHM)

Pallenopsis sibogae LOMAN

Family Phoxichilidiidae

Anoplodactylus gestiens (ORTMANN)

Family Ammotheidae

Achelia echinata HODGE

Achelia superba (LOMAN)

Achelia bituberculata HEDGPETH

Ascorhynchus ramipes (BÖHM)

Ascorhynchus glaberrimum SCHIMKEWITSCH

**Ascorhynchus tuberosum* sp. nov.

Lecythorhynchus hedgpethi UTINOMI

1) Contributions from the Seto Marine Biological Laboratory, No. 381.

Family Colossendeidae

Colossendeis chitinsa HILTON

*—new to Japan. **—new to Sagami Bay.

I am greatly indebted to His Majesty the Emperor and His assistant in the Laboratory Mr. H. TSUJIMURA for the privilege of examining this interesting collection.

Description of the Species

Family Nymphonidae

Genus *Nymphon* J. C. FABRICIUS, 17941. *Nymphon japonicum* ORTMANN

Nymphon japonicum ORTMANN, 1890, p. 158, pl. 24, fig. 1 (part); HEDGPETH, 1949, p. 249, fig. 20; STOCK, 1954, p. 18, fig. 6 *a-e*; UTINOMI, 1955, p. 5; UTINOMI, 1959, p. 199.

Material: Many males and females (Sp. No. *Pycn.* 53). 5 km south of Zyôgasima, 100-105 m. 27-VII-1959.

2. *Nymphon ortmanni* HELFER

Nymphon japonicum LOMAN, 1911, p. 8 (part).

Nymphon ortmanni HELFER, 1938, p. 164, fig. 1; STOCK, 1953, p. 34, fig. 1; STOCK, 1954, p. 20, fig. 6 *d-e*; UTINOMI, 1955, p. 10, fig. 5.

Material: 1 ovigerous male (Sp. No. *Pycn.* 55). 2 miles off Zyôgasima, 190 m. 28-VII-1959.

3. *Nymphon kodanii* HEDGPETH

Nymphon kodanii HEDGPETH, 1949, p. 252, fig. 23; STOCK, 1954, p. 21, fig. 6 *f*; UTINOMI, 1955, p. 7, fig. 3.

Material: 1 male (Sp. No. *Pycn.* 56). 2 miles off Zyôgasima, 190 m. 28-VII-1959.

4. *Nymphon giraffa* LOMAN

(Figs. 1-2)

Nymphon giraffa LOMAN, 1908, p. 39, pl. VI, figs. 74-82.

Material: 1 ovigerous male (Sp. No. *Pycn.* 63). Between Maruyama-dasi and Kannonzuka-dasi, 65-70 m. 5-VI-1960.

Description: Body light yellow in color, rather compact. Neck long, distinctly constricted in front of base of ovigers. Trunk completely segmented with squarish or subrectangular segments. Crurigers separated by about their diameter. Ocular tubercle large, rounded, with two large eyes anteriorly and two small eyes posteriorly at tip; eyes feebly pigmented. Abdomen short, directed upwards, bifurcated at end.

Proboscis stout, barrel-shaped, about as long as cephalic segment, slightly swollen midway.

Chelifores with robust scape. Chelae unusually large and with disproportionately plump palm. Fingers short, about half as long as palm, crossing at tip, armed with many small denticulations.

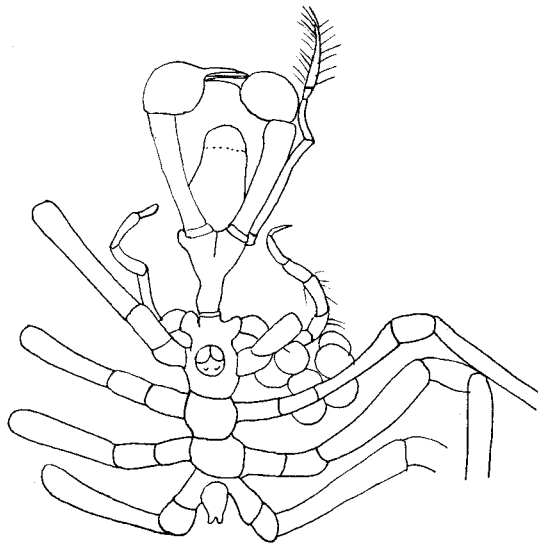


Fig. 1. *Nymphon giraffa* LOMAN.
Dorsal view of an ovigerous male (Sp. No. 63). ($\times 10$)

Palpi long, slender, second joint a little shorter than scape of chelifores, third joint less than second joint, fourth joint shortest, and fifth joint unusually large, about as long as third and fourth joints combined together. Terminal joints armed with setae like a brush.

Oviger as usual 10-jointed, with a terminal claw.

Walking legs slender, moderately long and almost glabrous except distally. First coxa short like crurigers, second coxa about 5 times as long as first coxa, third coxa slightly longer than first coxa. Femur longer than the sum of three coxae, first tibia somewhat longer and slenderer than femur, second tibia longest and slender, tarsus a little shorter than propodus. Terminal claw very short, much

shorter than tarsus. Auxiliary claws about as long as principal claw, though slender.

Measurements (in mm):

Proboscis	1.5	Palp	2.0
Trunk	0.5	Chela	1.0
Abdomen	0.2	Scape	1.3
First leg	16.0		
Width of trunk, across 2nd crurigers	0.3		

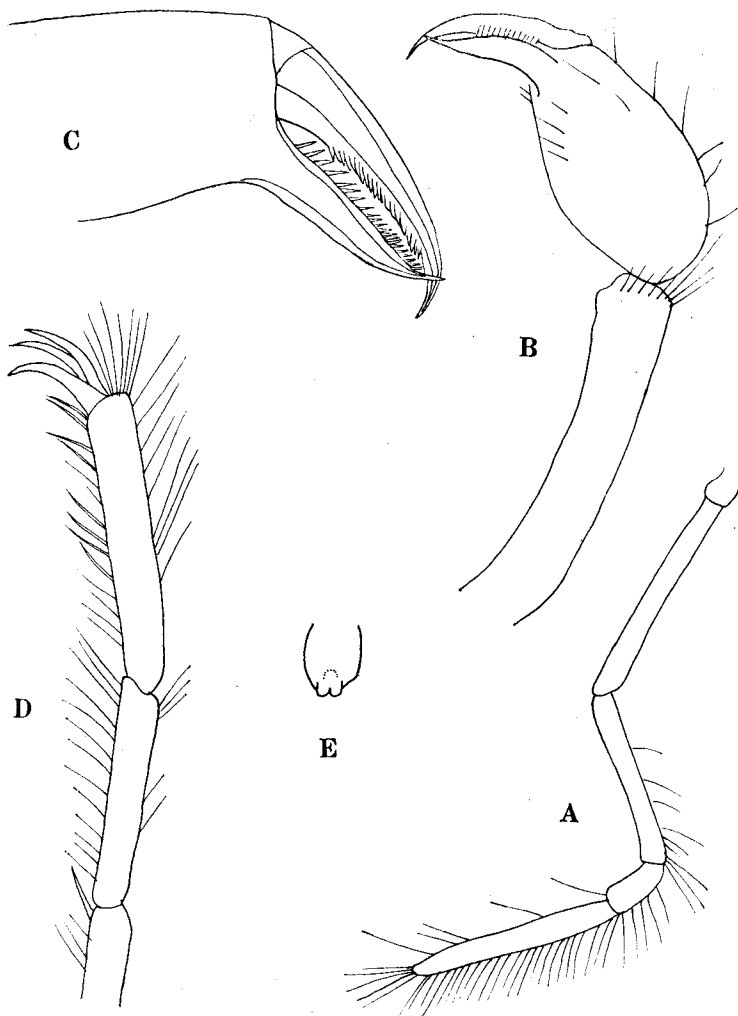


Fig. 2. *Nymphon giraffa* LOMAN.
A, palp; B, chelifore; C, chela; D, distal joints of leg; E, abdomen.
(A, B, E $\times 33$, C, D $\times 53$)

Remarks: The present specimen agrees exactly with a unique species *Nymphon giraffa* LOMAN ever recorded only from Makassar Strait, Indonesia, 34 m in depth.

Family Callipallenidae

Genus *Callipallene* FLYNN, 1929

5. *Callipallene phantoma* (DOHRN)

(Fig. 3)

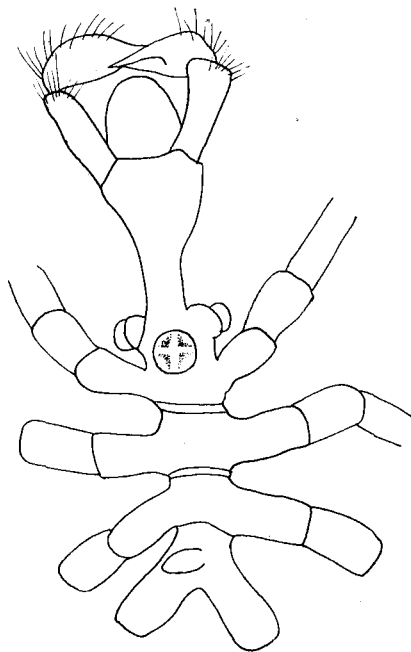


Fig. 3. *Callipallene phantoma* (DOHRN).
Dorsal view of an ovigerous male,
legs omitted. ($\times 33$)

Pallene phantoma DOHRN, 1881, p. 196, pl. XIV, figs. 1-9.

Callipallene brevirostris OHSHIMA, 1942, p. 257, figs. 1-3. (non JOHNSTONE).

Callipallene phantoma phantoma [sic] STOCK, 1952, p. 4, figs. 12-14, 20, 25-27.

Material: 1 ovigerous male (Sp. No. *Pycn.* 72). Off Zyôgasima, 100-160 m.
4-II-1962.

Measurements (in mm):

Proboscis	0.65
Neck	0.6 (from below)
Trunk	1.48
Abdomen	0.18

Remarks: STOCK (1954, p. 39) recorded a new species (*C. conirostris*) from Sagami Bay, 80–120 fathoms from Dr. Th. MORTENSEN's Pacific Expedition 1914–16. Yet the present specimen is referable to *C. phantoma* (DOHRN) which was ever recorded from Sasebo Dockyard, Kyusyu by OHSHIMA (1942) as *C. brevirostris* in having a rounded eye tubercle at the base of long neck.

Genus *Propallene* SCHIMKEWITSCH, 19096. *Propallene longiceps* (BÖHM)

Pallene longiceps ORTMANN, 1890, p. 165, pl. XXIV, fig. 7.

Propallene longiceps STOCK, 1954, p. 31, fig. 12*a–b*; UTINOMI, 1959, p. 199.

Material: 1 female (Sp. No. *Pycn.* 59). 18.4 km off Ryûôzaki, Ôsima (34°31.1' N, 139°27.4' E), 103 m. 8–III–1960.

Genus *Pallenopsis* WILSON, 18817. *Pallenopsis sibogae* LOMAN

Pallenopsis plumipes LOMAN, 1908, p. 66, pl. XII, figs. 160–164. (non MEINERT).

Pallenopsis sibogae LOMAN, 1911, p. 14; STOCK, 1954, p. 63, fig. 30*h–i*; UTINOMI, 1955, p. 19, fig. 11; UTINOMI, 1959, p. 199.

Material: 1 female (Sp. No. *Pycn.* 71). 4 km WSW of Zyôgasima, 100–160 m. 4–II–1962.

Family Phoxichilidiidae

Genus *Anoplodactylus* WILSON, 18788. *Anoplodactylus gestiens* (ORTMANN)

Phoxichilidium gestiens ORTMANN, 1891, p. 166, pl. XXIV, fig. 8.

Anoplodactylus gestiens HEDGPETH, 1949, p. 284, fig. 40*a–d*; STOCK, 1954, p. 71, fig. 31*a–b*.

Material: 1 female (Sp. No. *Pycn.* 58). Kannonzuka-dasi, Amadaiba, 65 m. 23–I–1960.

Family Ammotheidae

Genus *Achelia* HODGE, 18649. *Achelia echinata* HODGE

Achelia echinata UTINOMI, 1959, p. 201, fig. 1 (synonymy).

Achelia echinata ssp. *nasuta* STOCK, 1956, p. 98, fig. 16a.

Material: 1 male (Sp. No. *Pycn.* 67). Between Maruyama-dasi and Kannonzuka-dasi, 65 m. 8-VI-1960.

1 ovigerous male (Sp. No. *Pycn.* 68). Mosaki, Kamegi-syō, 9 fms. 28-VII-1962.

1 female (Sp. No. *Pycn.* 70). 2.6 km southwest of Zyōgasima, 80-85 m. 1-II-1962.

1 young female (Sp. No. *Pycn.* 73). Kannonzuka-dasi, Amadaiba, 70-80 m. 6-II-1962.

Remarks: As represented by many specimens in the collections of the Biological Laboratory of the Imperial Household, this pan-boreal species seems to be very common in Sagami Bay. As shown by this record and former data, the vertical range of this species is quite large for the genus, extending down to 200 fathoms off Misaki (after STOCK, 1956).

10. *Achelia superba* (LOMAN)

Ammothea superba LOMAN, 1911, p. 11, pl. I, figs. 14-15 & pl. II, figs. 16-24.

Achelia superba HEDGPETH, 1949, p. 287; STOCK, 1954, p. 96; UTINOMI, 1955, p. 23, fig. 13; UTINOMI, 1959, p. 202.

Material: 2 males (Sp. No. *Pycn.* 64). Between Maruyama-dasi and Kannonzuka-dasi, 65-70 m. 5-VI-1960.

1 male (Sp. No. *Pycn.* 74). Aoyama-dasi, Amadaiba, 85-90 m. 9-II-1962.

Remarks: As previous collecting records indicate, this species seems to be confined to Sagami Bay and neighbouring waters, ranging from 37 to 50 m in depth.

11. *Achelia bituberculata* HEDGPETH

(Fig. 4)

Achelia bituberculata HEDGPETH, 1949, p. 287, fig. 41a-g; STOCK, 1954, p. 94, fig. 44.

Material: 2 males (Sp. No. *Pycn.* 57). Kannonzuka-dasi, Amadaiba, 75 m. 20-I-1960.

Description: Trunk compact, disk-shaped, segmentation undefined, lateral processes closely touching.

The cephalic segment is wide, armed with a spinule at the base of chelifore on the frontal margin. Eye tubercle tall, abnormally bifurcated at tip, with 4 developed eyes. There are two prominent dorsal trunk tubercles, of which the anterior one is as large as eye tubercle and trifurcated, while the posterior one, lying at the base of abdomen, is slender, simply pointed and tipped with a spine.

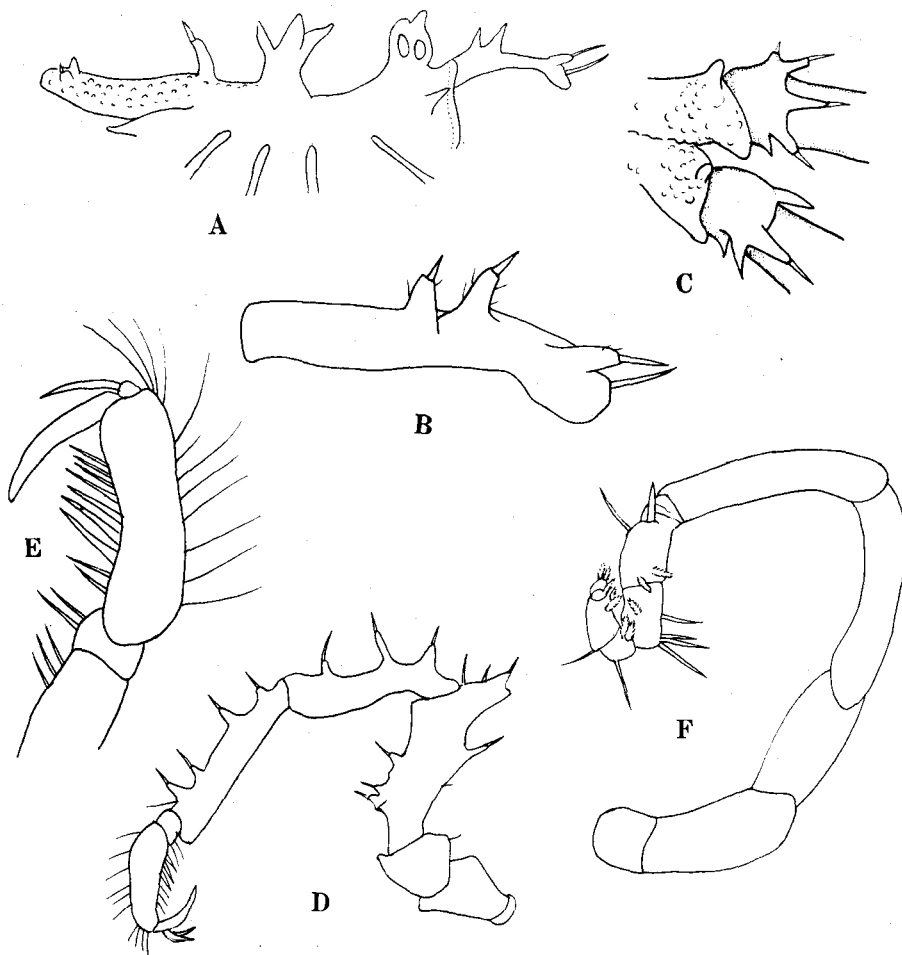


Fig. 4. *Achelia bituberculata* HEDGPETH.

A, dorsum of trunk in lateral view; B, scape of chelifore; C, lateral processes and first coxae in second and third segments of trunk, upper view; D, second leg; E, distal joints of leg; F, male oviger.

(D $\times 27$, A, C $\times 33$, E-F $\times 63$, B $\times 80$)

Abdomen cylindrical, horizontal and provided with 2 spinules dorsally near the distal end.

At the anterior and posterior corner of each lateral process there is a bluntly tipped tubercle. Also bifurcated, spine-bearing tubercles occur on the first coxae, at the anterior and posterior corner. The integument is granular, heavily pigmented.

Proboscis a little shorter than trunk, broadly oval. Chelifore about one-third as long as proboscis, with globular subchela. Scape long, slender, armed with a spine-bearing tubercle distally and 2 spine-bearing tubercles about midway (as figured by STOCK, though undefined in HEDGPETH's original figure).

Oviger as usual 10-jointed. The sixth joint bears a strong, reversed spine at the base (probably characteristic for the male of the genus) and 2 compound spines distally. Also a compound spine occur ventrally and a tuft of stiff setae on the distal outer corner of the seventh, 2 compound spines on the eighth, 1 compound spine on the ninth and 2 compound spines on the tenth.

Walking legs almost uniform in length, much knobby, with many spine-bearing tubercles dorsally. Propodus arcuate, almost uniform in width and with 3 large spines on heel. Terminal claw broad, about half as long as propodus. Auxiliary claws more than half as long as principal claw.

Measurements (in mm):

Proboscis	0.9	Third leg:	
Trunk	1.1	Coxa 1	0.4
Abdomen	0.7	Coxa 2	0.35
Eye tubercle	0.3	Coxa 3	0.29
Ant. dorsal tubercle	0.3	Femur	0.88
Post. dorsal tubercle	0.23	Tibia 1	0.71
Chelifore	0.4	Tibia 2	0.76
Oviger	2.0	Tarsus	0.12
		Propodus	0.47
		Terminal claw	0.3

Remarks: The present material agrees in general with both the descriptions of HEDGPETH and STOCK, but apparently highly variable in the tuberculation of the trunk and appendages. The locality where previous materials were collected seems to be shore, on corallines, while this material was obtained from deeper depth.

Genus *Ascorhynchus* G. O. SARS, 1877

12. *Ascorhynchus ramipes* (BÖHM)

Ascorhynchus ramipes UTINOMI, 1959, p. 207, fig. 4B (synonymy).

Material: 1 ovigerous male (Sp. No. *Pycn.* 52). 2.5 km SSW of Zyôgasima, 85 m. 27-VII-1959.

13. *Ascorhynchus glaberrimum* SCHIMKEWITSCH

Ascorhynchus glaberrimum HEDGPETH, 1949, p. 293; UTINOMI, 1955, p. 26, fig. 15; UTINOMI, 1959, p. 208.

Material: 1 male (Sp. No. *Pycn.* 69). 2.5 km northwest of Kamegisyo, 50-60 m. 3-XII-1961.

Measurements (in mm):

Head	2	Proboscis	4
Trunk	6	Palp	ca. 6
Abdomen	1.5	Chelifore	0.8
Lateral process	1.2	Width of trunk	0.7

14. *Ascorhynchus tuberosum*, sp. nov.

(Figs. 5-6)

Holotype: 1 ovigerous male (Sp. No. *Pycn.* 60). 5 km southwest of Zyôgasima, 300-450 m. 9-IV-1960.

Description: Entire animal of the usual type, though small for the genus. Trunk distinctly segmented. Dorsal transverse ridge of segments 1 and 2 provided with a pair of small, low, rounded tubercles, and segments 3 and 4 lack dorsal tubercles. Lateral processes separated by about their own diameter, each with a small blunt tubercle at the distal end. Cephalic segment robust, as long as wide, squarish in outline, with a low rounded eye tubercle situated in front; 4 feebly pigmented eyes occur at tip.

Oviger implantation situated at the base of chelifores. Proboscis bottle-shaped plump at tip, apparently non-tripartite, bent downwards and posteriorly. Abdomen elongate, cylindrical, directed posteriorly.

Chelifores with one-jointed robust scape and a distinctly chelate chela.

Palpi directed posteriorly below the trunk, hook-like in shape, 10-jointed; second joint longest, fourth joint a trifle shorter than second joint, with some scattered hairs midway; last five joints setose ventrally.

Ovigers 9-jointed, U-shaped. Sixth to ninth joints with compound spines, according to the formula 5:3:2:3. Terminal claw short, without denticulations.

Legs rather tuberculate at proximal joints, and glabrous and slender at distal joints. First coxa short, with a blunt tubercle at anterior distal corner, second coxa about twice as long as first coxa, third coxa curved, shorter than second coxa, femur plump and tuberculate, with a prominent dorsal tubercle about midway and 2 or 3 smaller tubercles distally and ending with a few stiff setae,

first and second tibiae slender and smooth, the latter being about half as wide as the former. Tarsus short. Propodus slender, slightly curved, about four times as long as tarsus, sole armed with about 6 spinules of uniform length. Claw slender, about half as long as propodus; auxiliary claws absent. Claw of first leg not reduced.

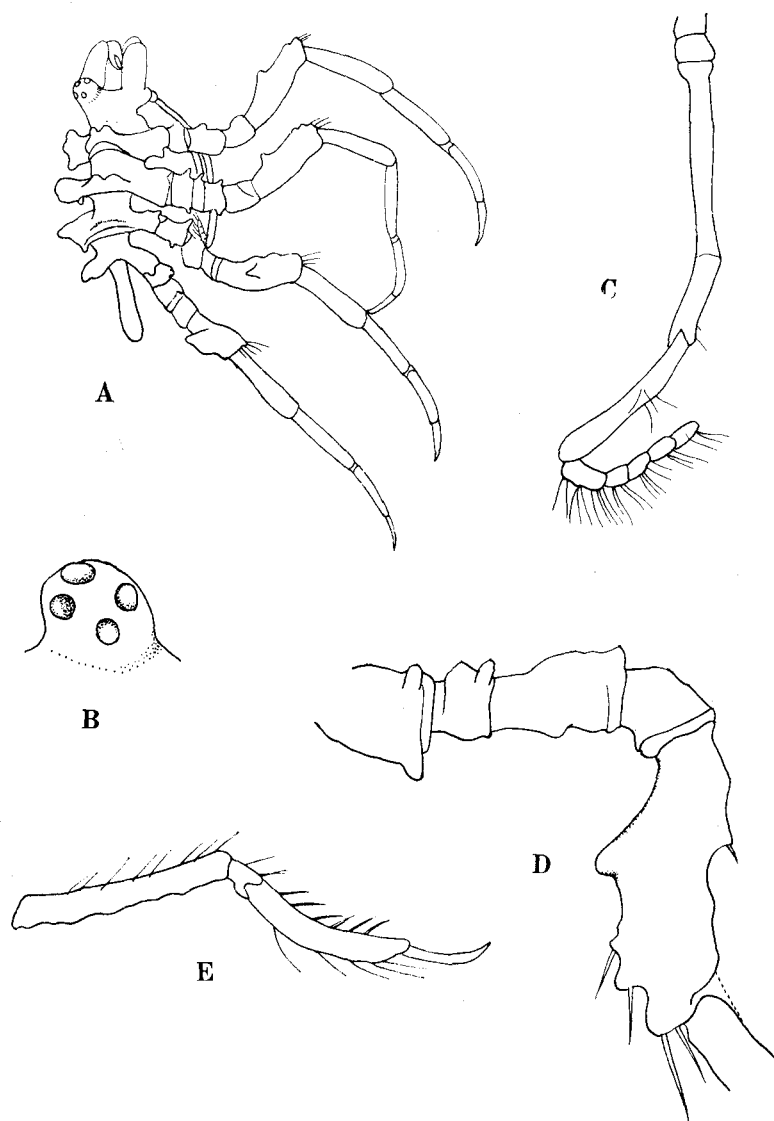


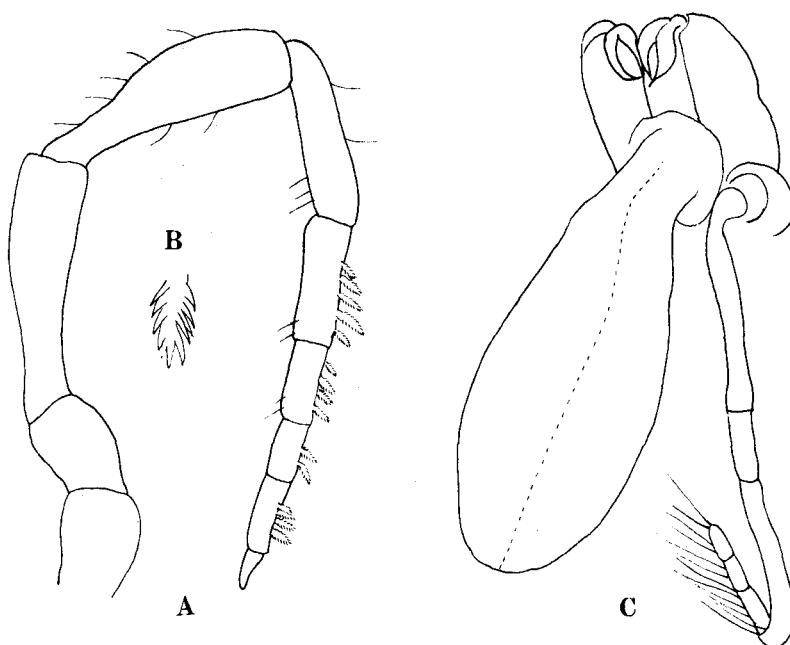
Fig. 5. *Ascorhynchus tuberosum*, sp. nov.

A, holotype (Sp. No. 60), upper view; B, eye tubercle; C, palp; D, basal joints of second leg; E, distal joints of second leg.

(A $\times 10$, C-E $\times 33$, B $\times 53$)

Measurements (in mm) :

Proboscis	1.5	Second leg :	
Scape of chelifore	0.5	Coxae 1+2	0.67
Palp, without flagellum	1.5	Coxa 3	0.47
Trunk	2.5	Femur	0.74
Abdomen	0.8	Tibia 1	1.01
First leg	5.0	Tibia 2	0.73
Lateral process	0.2	Tarsus + propodus	9.67
Width of trunk, without lat. process	0.4	Terminal claw	0.33

Fig. 6. *Ascorhynchus tuberosum*, sp. nov.

A, male oviger; B, compound spine of oviger; C, proboscis, palp and chelifores, ventral view (in situ).

(C $\times 33$, A $\times 53$, B $\times 150$)

Remarks: Within the brachytarsal group of the genus, this new species has no alliance, as indicated by the occurrence of blunt tubercles on the dorsum of the trunk and legs and a rounded eye tubercle at the front of the cephalic segment.

Genus *Lecythorhynchus* BÖHM, 187915. *Lecythorhynchus hedgpethi* UTINOMI*Lecythorhynchus* sp. HEDGPETH, 1949, p. 296, fig. 44e-f.*Lecythorhynchus hedgpethi* UTINOMI, 1959, p. 212, figs. 7-9.

Material: 1 immature female (Sp. No. *Pycn.* 50). 9 miles off Susaki, 90 m. 24-VII-1959.

1 male (Sp. No. *Pycn.* 62). Between Maruyama-dasi and Kannonzuka-dasi, 65-70 m. 5-VI-1960.

1 male (Sp. No. *Pycn.* 66). Okinoyama, 90 m. 7-VI-1960.

Family Colossendeidae

Genus *Colossendeis* JARZYNSKY, 187016. *Colossendeis chitinsa* HILTON

Colossendeis chitinsa HEDGPETH, 1949, p. 301, fig. 47e-h; STOCK, 1954, p. 161, fig. 79; UTINOMI, 1955, p. 34, fig. 20.

Material: 2 males (Sp. No. *Pycn.* 65). 2.5 km southwest of Zyôgasima, 75-80 m. 6-VI-1960.

Measurements (in mm):

	A	B
Proboscis	5.5	5.5
Trunk	4.0	4.0
Abdomen	0.2	0.2
First leg	24.0	24.0
Palp	—	8.5
Lateral process	—	0.5

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